RESEARCH REVIEW TEAM DATA REQUEST

JOINT INSTITUTE FOR THE STUDY OF THE ATMOSPHERE AND OCEAN (JISAO)
UNIVERSITY OF WASHINGTON

1. Please provide the Mission, and a brief history of your Joint Institute (JI).

JISAO Mission and Brief History

Since 1977, the overall mission of the Joint Institute for the Study of the Atmosphere and Ocean (JISAO) has been to facilitate cooperative research between the National Oceanic and Atmospheric Administration (NOAA) and the University of Washington. On the NOAA side, the principal connection is the Pacific Marine Environmental Laboratory (PMEL). JISAO is governed by 30 Senior Fellows, who are divided between University faculty and NOAA/PMEL staff that hold affiliate faculty appointments at the University. The Director of JISAO reports to the University's Vice Provost for Research.

Over its 26-year history, most of the cooperative research in JISAO has involved faculty, staff, and graduate students in the University of Washington's School of Oceanography and the Department of Atmospheric Sciences and NOAA scientists at the NOAA Pacific Marine Environmental Laboratory (PMEL). The present makeup of the Senior Fellows of JISAO is heavily weighted toward these units.

The Institute's "core" Task I visiting scientist and postdoctoral program, to which the University contributes by waiving indirect costs, supports on average two postdoctoral fellows on annual appointments, renewable for a second year and, with lower priority with regard to funding, more senior visitors on leave from their home institutions. JISAO provides space, computer time, administrative support, and other services for these individuals. It also provides travel expenses and honoraria for a number of short-term visitors and it organizes workshops and seminars. JISAO's Task II and Task III programs serve as vehicles for funding research scientists (UW professional staff), post-doctoral research associates and graduate students through the JISAO cooperative agreement grant. The Task II program supports directed collaborative research efforts between NOAA and University scientists and the Task III program supports University of Washington research in areas compatible with the Institute's major research themes.

2. What is the total amount of NOAA funding in the last full year of the Joint Institute's (JI's) academic period?

a) Please break out funding provided by Lab/Center.
This question was completed by John Cortinas' office.

b) Please provide the Research themes supported by the funding.
This question was completed by John Cortinas' office.

c) What percent of your research, is short term (0-2 years), medium term (2-5 years), or long term (greater than 5 years)

Nearly all the research conducted in JISAO is directed toward the development of the scientific knowledge base for environmental prediction and management. Hence, it is most appropriately viewed as long term (5-year +), even though most of the research projects and many of the specific objectives (like completing a paper, having a model up and running or conducting a field program) are short and/or medium term.

Although the time scale for JISAO research is long, the specific "products", discoveries or scientific concepts that accrue from it sometimes find their way into operational use within a matter of a year or two. Examples include data from the TAO moorings and field programs, indices of the Arctic and Pacific Decadal Oscillations, and discoveries relating to aerosol sources and transports. Such short-term payoffs are often difficult to anticipate in advance as part of a strategic planning exercise that focuses on specific "deliverables". It's only through long term research programs with broadly defined goals and objectives that JISAO is able to provide innovative "products".

d) What is the geographic scope of your research - regional, national or global? (Please explain)

Most of the JISAO research on the climate and environmental chemistry themes has a global emphasis, though most of the fieldwork is in the Pacific and in the Bering Sea. Fisheries recruitment focuses on the Pacific coast, from Washington and Oregon, northward through Alaska. Work on climate impacts has a Pacific Northwest emphasis and tsunami prediction emphasizes the Washington coast and Puget Sound.

3. What percent of the total Joint Institute funding comes from NOAA?

Approximately 95% of JISAO's funding came from NOAA in fiscal year 2003.

4. What is the unique expertise that the JI brings to NOAA. (e.g. special scientific skills)

The University of Washington is exceptional for its breadth and depth of expertise in the geosciences and in fisheries. Its faculty contributes expertise in the areas covered by JISAO's research themes:

- seasonal to interannual climate prediction (Battisti, Sarachik,Wallace)

- the physics of greenhouse warming (Hartmann, Fu)
- ocean observations (Riser, Eriksen, Rhines)
- atmospheric observations (Houze)
- weather prediction (Mass)
- atmospheric aerosols and trace gases (Covert, Charlson, Jaegle, Thornton)
- carbon chemistry (Emerson, Murray, Quay)
- Arctic climate (Aagaard, Warren, Untersteiner, Rothrock, Morison)
- fisheries recruitment (Dickoff, Francis, Herwig, Hilborn, Horne, Miller, Gunderson, Naish, Skalski)
- fisheries management (Miles, Huppert, Layton)
- climate impacts (Miles, Lettenmaier, Palmer, Peterson, Fluharty)

Most the above faculty has served as a PI or co-investigator on projects funded through JISAO within the past few years, and some of them participate in cooperative research projects at the NOAA laboratories.

Some of the JISAO senior staff also deserve mention for their unique contributions to the pool of expertise that resides within JISAO. Examples include Tadd Anderson (atmospheric aerosols), Albert Hermann (ocean modeling), Nathan Mantua and Philip Mote (climate impacts), Donald Denbo (information technology), Nicholas Bond (atmospheric dynamics and in situ measurements), David Butterfield and Joseph Resing (hydrothermal vents) Vasily Titov (tsunami prediction), Rolf Sonnerup (ocean carbon) and Todd Mitchell (climate data management).

University of Washington facilities also benefit NOAA researchers. The research vessel "Thompson" and the isotope mass spectrometer are notable examples.

5. Please provide a breakdown of staff funded by NOAA (such as scientist, engineers, computer specialists, and administrative.) Please include only staff, who receive 50% or more of their funding from NOAA.)

Please see attachment entitled, "Employee Count (Fiscal Year 2003)"

In your response please identify a contact person and a telephone number, in case clarifying information is needed.

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